

Stephen & Seth Porges on Polyvagal Theory

[00:00:00] **Seth Porges:** Polyvagal theory is this idea that how safe we feel is crucial to our mental and physical health and happiness. When we feel safe our body operates differently than we feel threatened or we feel traumatized. Our entire body through our autonomic nervous system, through our vagus, shifts its orientations, its priorities, what systems get resources, so that instead of having the systems that are there for defense, violence, running, activation, the systems that are there for healing, growth, restoration, but also, and this is crucial, and I think somewhat surprising to people, social behavior.

They are turned on. The ones for creativity for critical thinking. Once you start to realize how much changes in terms of how we live in this world and what our body does based on how safe we feel, the next question is, what can we do to make ourselves and other people feel safe?

[00:00:53] **Jill Stoddard:** That was Stephen and Seth Porges on psychologists off the clock. We are four experts in psychology here to bring you cutting edge and science based ideas from psychology to help you flourish in your relationships, work, and health.

[00:01:16] **Debbie Sorensen:** I'm Dr. Debbie Sorensen, a clinical psychologist practicing in Mile High, Denver, Colorado, and author of Act for Burnout, Act Daily Journal, and the Act Daily Card Deck.

[00:01:25] **Emily Edlynn:** From America's Heartland, I'm Dr. Emily Edlynn a clinical psychologist based in Chicago, Illinois, and author of Autonomy Supportive Parenting.

[00:01:34] **Michael Herold:** Calling in from Vienna, Austria. I'm Michael Herold, ACT coach, confidence trainer, and author of an upcoming book on being a better conversationalist and making friends.

[00:01:42] **Jill Stoddard:** And from coastal New England, I'm Dr. Jill Stoddard, author of Be Mighty, The Big Book of Act Metaphors, and Impostor No More.

[00:01:49] **Emily Edlynn:** We hope you take what you learned here to build a rich and meaningful life.

[00:01:53] **Michael Herold:** Thank you for listening to Psychologists Off The Clock. I'm here with Emily to introduce today's episode where I have two guests with me today, Dr. Stephen Porges and his son, Seth Porges. And we're talking about their new book that's all about polyvagal theory. Um, and we did have Stephen on the podcast in the past when Diana interviewed him during COVID and they now have a Like, more user friendly book for folks who want to learn about polyvagal theory and, you know, I will say in the intro that this, um, theory is a little bit controversial because some people in the field think it's quite, quite valuable but is somewhat incomplete or, may not adequately explain all of human behavior and experience, but it certainly does say a lot about our physiological response to, stress and feeling unsafe.

[00:02:57] **Jill Stoddard:** And the safety piece is why we really wanted to talk about this topic on Psychologists Off the Clock, because it feels like for the last several years, we humans have been in kind of a chronic state of really feeling unsafe, and polyvagal theory is all about feelings of safety or unsafety. So Emily, what was your reaction to the episode?

[00:03:19] **Emily Edlynn:** that's exactly the biggest piece I took away was how fundamental sense of safety is to our well being as humans at the same time as we're living in a world that it's under constant assault in many ways, not just our physical safety in our day to day living that the pandemic really heightened. But, I mean, we're constantly facing news headlines and video footage of atrocities happening in the world that, back in the day, without this, you know, 24 hour accessibility, we would have no idea it's happening.

So I think there's that awareness of all the trauma and tragedy in the world, combined with kind of an overall hypervigilance and alertness of how we live these days where our phone is constantly dinging and we don't know what's going to come at us next. And I think we're all sort of in more hyper arousal of our nervous system than like a healthy baseline

[00:04:27] **Jill Stoddard:** Yeah, I think that's exactly right. And when you say, You know, the fact that we're exposed to this 24 7 news cycle, it's not actually the case that life is more dangerous now than it has been in the past, it's that we're more aware of these threats. And as the Porges' point out, polyvagal theory actually has very little to do with how safe we are.

It has everything to do with how safe we feel. And those two things don't necessarily line up.

[00:04:56] **Emily Edlynn:** right? And that's such a good distinction. I also think it really brings up how critical it is for our health and well being, just to know that we have to be really intentional about setting those boundaries with being so on and accessible that it's for our very baseline of functioning to be intentional about those boundaries as our wellness.

[00:05:23] **Jill Stoddard:** Yeah, a hundred percent. And I think what you're pointing out is exactly that, that there are ways that we can make ourselves feel more safe and what the Porges' talk about are the ways that we can stimulate the vagus nerve specifically.

And what you're talking about is really modifying our environment in a way that we're less likely to have that sense of danger activated.

[00:05:56] **Emily Edlynn:** right? And I think being in tune with when our nervous system is activated, how that feels in our body and knowing that feeling, and then being able to take a pause and help care for our nervous system. It's like, what's the medicine for our nervous system. And then that helps our sense of safety. So I think that's how it all connects.

One of my favorite parts, and listeners should stay tuned for the end, when Johnny Mathis becomes part of Polyvagal Theory. Ha ha ha.

[00:06:27] **Jill Stoddard:** Yes, that was very cute and, and Dr. Porges even made a comment that he was sort of dating himself there by using a Johnny Mathis, reference, but yeah, that was great. That made me smile too. Well, we hope you enjoy this episode with Stephen and Seth Porges.

Hey everybody, it's Jill here, and I'm so thrilled to have Dr. Stephen Porges back on the podcast today. He joined us for episode 131 to talk about polyvagal theory during the COVID 19 pandemic, and today he's back and he is joined by his son, Seth Porges, and they're here to talk about their latest book that they wrote together, *Our Polyvagal World, How Safety and Trauma Change Us*.

Dr. Stephen Porges is a distinguished university scientist at Indiana University, where he is the founding director of the Traumatic Stress Research Consortium. He is Professor of Psychiatry at the University of North Carolina and Professor Emeritus at both the University of Illinois at Chicago and the University of Maryland.

He lives in Atlantic Beach, Florida. Seth Porges is a journalist and filmmaker. He directed the critically acclaimed documentary *Class Action Park* for HBO

Max. And he lives in Atlantic Beach, Florida, and Brooklyn, New York. Stephen and Seth, I think you are our first father son guest duo, so thank you so much for joining me on Psychologists Off the Clock.

[00:07:53] **Stephen Porges:** Well, thank you, Jill, and it's going to be my pleasure not just merely to be interviewed by you, but basically to listen to my son. So

[00:08:00] **Seth Porges:** Oh, right, right, right, right. Yeah, yeah, yeah. Great to be here.

[00:08:04] **Jill Stoddard:** So Seth, as your bio said, you are not a mental health guy, but a journalist and filmmaker, so I'm sure our listeners are going to be curious about how you came to co author this book with your dad.

[00:08:15] **Seth Porges:** Yeah. You know, um, my dad here, who is the creator of polyvagal theory, uh, this information is just so important. And I think it's helpful to so many people. And we realized that there was sort of this problem. The problem was that all the books out there written about polyvagal theory were overly academic, clinical, impenetrable, and decipherable, didn't really make sense to the people

[00:08:37] **Stephen Porges:** Seth, just talk about my books then.

[00:08:40] **Seth Porges:** Yeah, it's just his book specifically. Other people's books are great. All the books he had written were were impenetrable by the people who would benefit from this information. Um, and so it actually began as a lecture I would give at bars. I took, you know, polyvagal theory and I turned it into a lecture I would give at events at bars while people had a couple of beers in them and would hoot and holler.

And a video of one of these talks went online and it kind of went viral. Like, yeah, 600, 000 views, but more importantly, the comments on it really showed us that there was just this hunger for this information in a decipherable and understandable and personal way. And, uh, so we decided like, Hey, we should just kind of turn this into a book.

And it was quickly realized, I think, that even though I'm non academic, uh, spending time with my dad at dinner table osmosis, I think I kind of just picked up the information, so to speak, uh, and from there, you know, the rest is history. It worked out pretty quickly and pretty greatly, I think.

[00:09:38] **Jill Stoddard:** I think your duo has worked very well together because I, of course, have read the book and I can, uh, I can testify to the fact that this is a very digestible book and I was actually quite impressed. I thought, wow, they've like really done a great job of simplifying this material in a way that's accessible, but that also doesn't feel dumbed down, if that makes sense.

It's kind of that perfect balance.

[00:10:04] **Seth Porges:** Yeah, and that's important because it's, you know, yes, it's great that the average non academic, non clinician can read this book and understand this material, but just as importantly, and I think you have as, You know, some of your listeners, people who are mental health professionals. Um, one of our other goals was to give those folks the language and vocabulary to speak to their patients, to speak to their clients in a way that would make sense to them as well.

So, you know, you can get it straight from the source in the book, or if you're a professional, the idea, okay, here's how you can frame it that might make more sense to your clients and patients.

[00:10:35] **Jill Stoddard:** Did you want to add anything,

Stephen,

[00:10:37] **Stephen Porges:** yeah. I wanna add that as an academic, one of the most frustrating things that I've had to live with is how do you communicate to real people. And you know, it's kind of like, what is it that you want to get done before you smile and wave goodbye? And the answer is, you want your ideas to really impact on, on the world we live in.

But as a scientist, we, uh. basically develop a skill set that is not really translatable into easily understood constructs. So it's almost this,

[00:11:06] **Jill Stoddard:** is not reading peer reviewed journal articles, but hopefully they are listening to podcasts

[00:11:10] **Stephen Porges:** yeah,

[00:11:11] **Jill Stoddard:** and reading these accessible books so that they're able to benefit from

[00:11:14] **Stephen Porges:** So, so it's, it's a paradox, really, what I'm saying is that we, we're locked into this strategy in which we write and then we criticize our own writing and we reference it, and by the time we finish with that, uh, idea, it's impenetrable. No one will understand it. Now, that being said. I still, as the father of my co author, I still don't understand how he could become so sophisticated to translate this complex theory into accessible terms.

But there's another paradox, or... dilemma for me is that when I had the book read to me, I heard my voice. I didn't hear Seth's. I heard my voice. So, what I'm really saying is that somehow Seth made my voice understandable to others. And I, I, it's, it's really, uh, it's To me, I just have a smile on my face when I think about it, and I also can't think of a greater gift a son can give his father than the ability to translate his work into digestible constructs or words that people can understand.

[00:12:19] **Jill Stoddard:** I love that. That is so fantastic. How great. Maybe you have a future as a ghost writer in addition to your other journalistic and documentary making talents.

[00:12:28] **Seth Porges:** only if it's for, only for the family members,

[00:12:30] **Jill Stoddard:** Only for the family.

[00:12:31] **Seth Porges:** please don't call me up. Author is looking for a ghostwriter. Yeah. Thank you.

[00:12:34] **Stephen Porges:** There's interesting family dynamics going on because my wife, Seth's mother, Sue Carter, who is the person who discovered the relationship between oxytocin and social behavior, is in line to try to convince Seth that, uh,

[00:12:48] **Seth Porges:** It's just,

[00:12:48] **Jill Stoddard:** She has to

do. He has to do her book next.

[00:12:51] **Seth Porges:** I have to must must.

[00:12:53] **Stephen Porges:** Oh, and then there's another one in the, in the line that his older, his older brother is a, uh, health psychologist, neuroscientist who

actually studies imaging and vagal nerve stimulation as well. And I'm sure he's not too far behind asking for

[00:13:08] **Seth Porges:** my

[00:13:08] **Jill Stoddard:** All right, well, you've got your work cut out for you for a while.

[00:13:12] **Seth Porges:** please work on

[00:13:13] **Stephen Porges:** Now, but, but,

but the other part is, you know, Seth is this amazingly creative individual and you can see this in terms of his movies and his articles and even within the book. So he could take ideas that could be quite dense and make them accessible and convey them in a narrative way where people want to read the rest of the book.

It

[00:13:35] **Jill Stoddard:** Yes, that was my

[00:13:36] **Stephen Porges:** It was, you know, he has a skill set, you know, it's not just saying he has a skill set. He has a true talent. And so, uh, I'm sitting back as his proud dad and I'm just feeling just great. He, he gave me something. He's given the world something. He's taken something that's quite complex and made it accessible.

[00:13:58] **Jill Stoddard:** Yeah, for sure. I was even, my husband is an IT guy. He's not in this world of, of mental health. And the whole time I was reading, I just kept exclaiming, this is fascinating. You need to read this book. I think you would really love this book. So we'll see if I can convince him to read it. But, let's go ahead and kind of start with the most interesting obvious place.

So for anyone who is not familiar with your work yet, let's just start with what is polyvagal theory?

[00:14:26] **Seth Porges:** So, so, okay. Polybagel theory is in the simplest dead simple. We summarize in one line at the very beginning of the book. It is really simple. It is this idea that how safe we feel is crucial to our mental and physical

health and happiness. When we feel safe. Our body operates differently than we feel threatened or we feel traumatized.

And this, uh, I think it's something innate and logical that people just sort of get because when we are stressed, uh, basically our body has limited resources, right? And it can either put those resources towards immediate survival, which is what the priority becomes when you feel threatened or traumatized or longterm health growth and restoration.

And when we feel safe, our entire body. Through our autonomic nervous system, through our vagus, shifts its orientations, its priorities, what systems get resources, so that instead of having the systems that are there for defense, violence, running, activation, the systems that are there for healing, growth, restoration, but also, and this is crucial, and I think somewhat surprising to people, social behavior.

They are turned on. The ones for creativity for critical thinking. All of those are just sort of turned on. And so from there, this you're, you know, polyvagal theory isn't is a big idea. And the reason it's a big idea is because once you start to realize how much changes in terms of how we live in this world and what our body does based on how safe we feel, the next obvious question is, what can we do to make ourselves and other people feel safe?

And that is such a big, big question. And part of our goal with this book was to really tease that out, you know, to really understand what it means to feel safe, which is different from being safe. What it means, what it happens to our body and what things make us and other people feel safe.

[00:16:14] **Jill Stoddard:** well, and I actually started reading the book, uh, the morning that I woke up to the news about the huge mass shooting in Maine, you know, which is very close to where my brother and his family live and their schools were shut down and stores were shut down, you know, while this gunman remained on the loose.

Um, and you talk about how we really live in a world designed to scare us, where our bodies are just inundated with signals that used to be reserved for just rare life-threatening kinds of events. So, and I wrote down this quote, you say quote. While we evolved to be occasional tourists to the state of fear and alarm, many of us have become full time residents end quote.

So can you talk a little bit more, you just, you, you alluded to it a little bit a second ago, but can you talk about it a little bit more? Like what is the impact of this on our mental and physical health and wellbeing?

[00:17:08] **Seth Porges:** Well, it's devastating. It's really simple. It's, you know, we, we, we're aliens, we, we evolved into a world that doesn't exist anymore, for the most part, we evolved into a world in which, uh, you know, we have these systems that were That came into existence for immediate survival, and now we live in a world that's almost optimized to activate them as nonstop as possible.

Um, you think about how social media works, where, uh, it's, it's, you know, algorithms determine what you're staring at, what you're engaged in, it just feeds you more and more and more of that. And when we're, when we feel threatened, we're more engaged, right? Like, doom scrolling through Twitter, right? We feel the sense of dread and fear, but we just can't stop.

And when we live in this world that wants our attention and our focus, and that's such, you know, perhaps the commodity of the modern world, um, it doesn't care about much else. It's, you know, in these algorithms, the way these systems work, the way programmers on TV work, they are incentivized to threaten us to make us feel threatened because that drives engagement and attention.

Not to mention what it's like to have a phone that's constantly vibrating in your pocket to deal with traffic, to deal with alarms, to deal with just the stresses of the modern world. It's devastating to our mental health is the truth.

[00:18:23] **Jill Stoddard:** it

[00:18:24] **Stephen Porges:** let,

[00:18:24] **Jill Stoddard:** made me wonder as I was, as I was reading, I was thinking about how And to me, at least, it feels like people have become seemingly more selfish, more individualistic over time. And I've always kind of thought that that's partly due to social media, where it's like, what am I going to post about me and my life?

But as I was reading the book, I thought, oh my gosh, I wonder if this is a result of us chronically feeling unsafe.

[00:18:50] **Stephen Porges:** okay, let me kind of engage on this one and let's give you a little more positive twist on it. The, okay, the, the answer is, as Seth was saying, that the signals are signals of threat and the society, literally its own

emergent properties of our society, has learned over centuries, if not millennia, how to manipulate human behavior through fear and uncertainty. So in a sense, we take away this newer, amazing co regulatory trusting, safe, uh, physiology that evolved to enable literally the infant to be safe in the arms of the mother. Or for other mammals to, in a sense, feel safe enough to be, give up our vigilance, our self defense, and feel that we are now in a safe place.

So, we have always evolved to turn that off for short periods of time, to protect and defend. But as long as we had sufficient opportunities for our nervous system to process signals of safety, then these homeostatic processes that support health growth and restoration would emerge. Now... Come on board now that psychologists and physiologists who learned something and how did society take that knowledge?

It says well if you make an organism feel not unsafe or less safe They'll be more mobilized and can we now shape that mobilization to serve whatever needs we want. And in a way, let's think about operant conditioning that, you know, all of us who are trained in psychology learned about, and that was using food deprivation to shape behavior.

And what that is all about is in a sense, shifting motivation from sociality, which is our natural part to co regulate and to use that physiological state of safety to have mental exploration, creativity, insights to pushing a lever to get food. And our society is very much like the rat or the pigeon, clicking on the lever to get more resources, and then having the narrative of those resources using top down framing of our behavior.

We need more, we need more. So rather than literally focusing on, I would say, the true existential questions are really what is it that makes me feel safe? So polyvagal theory really, in a way, goes at certain existential, philosophical questions about human experience. And it really comes down to the fact is that we have all the things we need on board to feel safe and satisfied, and they really come down to the roots of safety with others, co regulation.

Mother infant.

[00:21:32] **Jill Stoddard:** it would make sense to define safety, you know, so much

[00:21:35] **Stephen Porges:** Yeah.

[00:21:36] **Jill Stoddard:** is about, so much of what we're talking about is safety. And maybe everyone listening goes, well, I know what safety, what safety

[00:21:42] **Stephen Porges:** Okay.

[00:21:42] **Jill Stoddard:** do you, want to take a minute to define what you mean

[00:21:44] **Stephen Porges:** I'm going to start with that and Seth will refine it and translate it.

[00:21:49] **Jill Stoddard:** Perfect. Right.

[00:21:50] **Stephen Porges:** spent, actually wrote a paper about a year or so ago called Polydecal Theory, A Science of Safety, and what the goal of the paper was to, in a sense, emphasize the importance of feelings, of safety, as being physiological and not being, quote, psychological and therefore irrelevant.

And that the ability to feel safe was dependent upon our autonomic nervous system being in a state that supported health growth and restoration. And when you have this homeostatic functions working, when they're working, you have the possibility of feeling safe. You have the neural platform upon which safety can be experienced.

Because once the physiology goes into a state of disruption of homeostasis, that platform provides that platform for threat. And because that's what, when we say we're anxious or we're stressed, so we overlay the, the simplicity of a physiology that is either supporting our health or not. And we overlay with these complex psychological constructs that confuse us and literally take our bodily systems and feelings out, create a causality that's outside our body.

So when we use terms like stress or anxiety. We frequently attribute a causal pathway from someone or something outside of us. And what polyvagal theory says, it's not outside of us, it's how our nervous system is regulating itself. And sometimes the external cues are irrelevant. Sometimes we're now driving that within ourselves.

And what Seth is saying, and I will agree, is that our society, in a way, has this almost distorted, uh, insight that can manipulate us by making us feel Unsafe or, unsafe enough to make us mobilize to press that lever and not enable us to direct

our resources towards each other. So let's go to your, your, point, which was when these cues are bombarded on you of threat.

The natural behavior is to take care of yourself, you become literally physiologically defensive, physically defensive, and you psychologically don't have the resource to be benevolent, to be caring, to be giving, because your script in your nervous system is to say, I have to protect myself, I have to survive.

When that gets dispelled through co regulation, then we start having compassion, we start being caring about others, and we start getting all the benefits. of enabling ourself to be accessible to others and literally fostering their accessibility to develop co regulation. We call it trust and friendships.

But if you're in a state of threat, what you're really saying physiologically is you're in a physiological state that is tuned to be defensive and not trust.

others.

[00:24:39] **Jill Stoddard:** you've got to zip up your suit of armor to protect yourself, and as long as you're in a suit of armor, it's, hard to have

[00:24:45] **Seth Porges:** Yeah, I'm gonna quote Yoda here. Fear leads to anger. Anger leads to hate. Hate leads to suffering. You just swap the word fear with feeling unsafe, you know, which is what fear is. I mean, George Lucas is right on there. It's true. This is what we're talking about here. But to kind of go back to your question about what do we mean by safety?

This is a really important distinction. Um, we don't actually mean to physically be safe, but rather that your nervous system interprets its surroundings as safe. Um, political theory stresses through what we talk about safety, but also we talk about trauma, that it's not so much the event that we're talking about, but our nervous systems response to the event. Our nervous system doesn't have any way of knowing if we're actually in danger. Um, a bus could skip a curb, lightning could strike us at any moment, an earthquake could hit, uh, but your nervous system does its best to assess the environment through this process we call neuroception, where it basically takes in all available sensory and experiential information, filters it through past experiences, and kind of out spits a rating.

Am I safe or am I threatened? And the answer to that question is what we're talking about when we talk about do I feel safe? And feeling safe is what

transforms your nervous system and consequently your body in the situation. And so it's a really important distinction because oftentimes the features of our society or the things people do that supposedly keep us safe might actually make us feel unsafe and have consequences that shouldn't be ignored.

That's not to say that actual safety doesn't matter. Of course it matters. It matters quite a bit. But what also matters is how safe people feel.

[00:26:21] **Jill Stoddard:** Right, and you gave a great example in the book of metal detectors,

[00:26:24] **Seth Porges:** Yes.

[00:26:25] **Jill Stoddard:** metal detectors are something that are meant to actually make us more safe, but the presence of them may make us feel less safe, and that's what really impacts the nervous system.

[00:26:35] **Stephen Porges:** Well, think about teachers carrying guns

[00:26:38] **Jill Stoddard:** Yeah,

[00:26:39] **Stephen Porges:** and the impact on children. It's also a trigger.

[00:26:43] **Jill Stoddard:** right.

[00:26:44] **Stephen Porges:** I used to have one of my slides that was really, uh, um, our definitions of safety are not consistent with our nervous systems definition of safety. It doesn't make it less important. The other thing that's kind of related to this is ACEs, adverse childhood experiences scale.

And a lot of people, uh, in the world of trauma literally identify themselves based on their ACE score. So people will literally come up to me and say, look, I'm, I am ACEs of eight, you know, this is what I've went through. ACEs are important, just like we're talking about, uh, physical threats are important.

ACEs are important. But they're events, and those events are not deterministically causal about our own physiological or internalized responses. So even though they are, let's say, risky, it doesn't mean you react it. Likewise, it doesn't mean that if you weren't exposed to those adverse childhood experiences that your body didn't react as if it had been.

So if someone gets yelled at in public or is, let's say, shamed in a classroom, it can be literally traumatic to that person's nervous system and they can be literally retuned for a lifetime.

[00:27:57] **Jill Stoddard:** Yeah. So what, what role does cognition play in polyvagal theory? Because I think about the fact that mammals don't get ulcers and they also don't have language and cognition,

[00:28:07] **Stephen Porges:** well,

[00:28:07] **Jill Stoddard:** do you see as the, the, the ways in which human beings are different from other mammals and the ways in which we tend to suffer psychologically

[00:28:15] **Stephen Porges:** well, you

can build animal models. You, You, can build animal models to get ulcers. So that's, and, and actually the ulcer is a subdiaphragmatic, uh, meaning a life threat, dorsal vagus, defensive reaction. It's part of what's happening. The way of thinking about cognition is a way of saying, and, and actually let's play with this metaphor.

You have intentionality and awareness. And then you have this other system of reflexive reaction to threat. So when you get literally triggered, your body reacts to signals. How powerful, how useful is your intentional brain in downregulating that. And the answer is your physiological reaction tends to be stronger than your intentionality.

And so we first have to now honor and respect that and literally investigate and experience what our body's telling us. So the cognitions come on after the physiological reaction and then we can start to down, uh, regulate, calm ourselves down through a greater understanding. So polyvagal theory literally gives a language to people to understand their bodily feelings and through that deconstruction of their own experience, meaning their cognitions now can start to temper their reactions.

So I've had people come back to me and say that once I read about the theory. It explained my reactions, uh, because they had been traumatized and that traumatic experience triggered their physiology. And then through introspection. So when, with the issue with neuroception is that you get triggered, but you don't know what triggered you.

So in a loud noise. You'd have to now figure out where did that loud noise come from, but your body already reacts to it. So traumatic experiences can often be like neuroception. We react to it, and then we start to build a narrative of what it was that affected us. And that narrative then builds memories.

This is your cognitive model. So the, it literally primes us. So when we get associations with those memories, the physiology comes back. Um, what is necessary using polyvagal theory in the world of, let's say, CBT or cognition, is to first... respect that our body reacts with a detection of threat. And that detection of threat is often, uh, it's very visceral, but we have basically, um, not a clear Uh, concept of what caused it, but our bodily feelings are immediately experienced.

So we, we know what our body is doing. It's telling us something. And then we try to make meaning out of that bodily feeling. That bodily feeling is called interoception. And we are aware when we get triggered with neuroception, it's reflexive, but the physiological reaction becomes. in our conscious mind.

And then we start to make meaning out of that. And that cognition locks us

[00:31:15] **Seth Porges:** Yeah.

[00:31:15] **Jill Stoddard:** almost a matter of order in some ways. And so like, like if, if, if my daughter and I both happen to drink caffeine, she tends to have a higher, I think from what I can tell, a higher interoceptive sensitivity. She also has a trauma history. But like we may have very similar physiological reactions, but then she sort of makes meaning cognitively of hers or what, what you might call a catastrophic misinterpretation of her interoceptive experiences that can then kind of trigger that autonomic nervous system, create kind of a higher sympathetic response. Whereas I experienced this as uncomfortable, but not as scary, not as dangerous. So we have like a different sense of safety because we're making meaning of that physiological response in a different way.

Is that

[00:32:01] **Stephen Porges:** me let me jump in on this. So polyvagal theory emphasizes the important role of autonomic state, physiological state as the intervening variable between stimulus and response. Recently, I rediscovered in Viktor Frankl, and this is, you know, something everyone reads in graduate school, uh, where Viktor Frankl talked about the space between stimulus and response.

And that space is the intervening variable. And what he says is within that space, is free will is the decision that we can make to react to those bodily feelings. And that's what polyvagal theory would say that in that space, you have the awareness through interoception that you can then make the decision of whether you react to that.

Now, for most people, especially those in, let's say, more volatile relationships, when the physiology shifts, they literally ride that horse. They ride the energy that, that signal triggered. So if the body gets reactive into a state of defense, they become behaviorally defensive. They ride the physiological state.

And in a sense, your daughter is doing that while you're saying, wow, this is kind of interesting. Yeah. My body shifted state. Now that's peculiar. Now. What if I take a slow exhalation, a deep breath? How do I feel? Does it just dissipate and now I can be supportive to my daughter as opposed to reacting in kind?

[00:33:31] **Jill Stoddard:** Yeah, it's, it's so interesting and I, I, when I was reading about neuroception, I found that so fascinating and I was thinking about my daughter during that too because she has some sensory processing issues around sound and I always suspected that this was related to her trauma history and by the way, I do have permission to talk about this publicly from her, um, and you know, so it really made me understand how and how it affects the different ways that we detect danger and safety.

And it's just fascinating. But one thing I know we're, we're short on time. There's so much to talk about, but one of the other things I wanted to make sure we do discuss, especially in relation to trauma, um, you know, you have this great first chapter about the nervous system, that's like a scientific primer, but written, as I said before, in a really beautifully accessible way.

And, you know, you, you, you compared our sympathetic nervous system or the fight flight to the incredible Hulk and our parasympathetic nervous system, the rest and digest to Bruce Banner. And I just, I thought that metaphor made it so easy to understand and remember, but I think the most important section, what's going to be new to some, people, but not all is where you really talk about the, incompleteness of conceptualizing the sympathetic and parasympathetic nervous systems in this way, because it ignores that automatic freeze response that you mentioned earlier so during a life threatening or traumatic event, people will often just shut down and freeze. So can you talk a little bit about that freeze response and especially clear up any misconceptions people might have, which you do a really lovely, thorough job covering in this book?

[00:35:04] **Stephen Porges:** So, uh, in psychology, we have a lot of words that don't always fit nicely into neurobiological constructs. So with freeze, we think about an animal that immobilizes or a person that immobilizes. But are we talking about freeze in the sense of looking like they're dead or freeze in which there's great muscle tone and like a deer in the light of headlights?

Um, the issue is. Uh, if we collapse and we go into like a life, uh, uh, death feigning, and mice do that when they're in the jaws of a cat, that's the dorsal vagus reaction to life threat. And many people with trauma histories, they have a narrative that sometimes has those features in it. But many people have chronic abuse histories.

And their body may have, on the first episode, frozen. You know, I should say, they collapsed. Physiologically collapsing is, is risky, is risky on a physiological level because you're not getting enough oxygenated blood to your head and also you hit the ground. It's also, when you faint, it's called vasovagal, the vagus is involved in it.

it's not a stretch, but that vagal reaction is a life threat reaction. Now, what happens to individuals is that our nervous system is clever and adaptive. So, when subsequent, uh, traumas and insults occur, the body may maintain sufficient sympathetic tone not to pass out, not to fall over, but not, not enough to support movement.

So, we see freezing, there's muscle tone, there's an upright posture. Uh, but there's an inability to run. Now, in Munch's painting, *The Scream*, we see that in terms of the person even wanting to vocalize and they can't vocalize the words, uh, *The Scream* can't even come out because *The Scream* is also due to laryngeal and pharyngeal nerves, which are ventral vagus, and they're not there when you're in the state of threat.

So we can explain these neurophysiologically. So first you collapse. at least, uh, wouldn't create a sequelae, a trajectory collapse, too challenging to nervous system, you freeze. And then it is repeated like in many people's lives. What is the next stage? Dissociation. And in dissociation, you're preserving autonomic function so that you're not getting into these, let's say, physiological risks and now you're in this dissociative mental realm. The interesting part is when you see it that way, you start to honor what dissociation is rather than being fearful of it. It's really this remarkable adaptive Uh, change in which higher cortical areas are literally constraining what brainstem defensive mechanisms are doing.

[00:37:50] **Jill Stoddard:** Yeah, it starts to actually make sense.

[00:37:53] **Stephen Porges:** That's right.

[00:37:53] **Jill Stoddard:** And we need to train police officers and, you know, first responders and about all of the different ways that people respond to

[00:38:01] **Stephen Porges:** well, especially, well, a lot of women have these experiences of basically abuse or rape where they were unable to mobilize. They didn't pass out. Some may have passed out, but they couldn't move. It wasn't like they were accessible and inviting it, but their bodies didn't listen to them. And the polyvagal theory as a narrative for their experiences has been very helpful for them in getting rid of feelings of shame and blame.

[00:38:29] **Seth Porges:** Yeah. And this is, this is I think one of the most important takeaways from people who are kind of under, beginning to understand polyvagal theory. We as a society have long kind of, uh, lived in this fantasy world where we assume that the typical and perhaps only response to duress is to fight or flee.

Um, but that's not always how our bodies respond. And when they respond with this dissociation or this freeze response, it's automatic and it's not a conscious decision. And this is really, really important for how people frame their own experiences, because when people begin to doubt whether they were actually perhaps assaulted, for example, that can cascade into just some awful territory, and people begin to doubt their own experiences.

It creates really real problems when people on juries, for example, expect that assault will always show a sign of a struggle. It creates problems in the ways we write our laws, in the ways politicians approach things, in the ways the media approach things. Approaches things. We live in this kind of CSI era where we assume there'll be, uh, you know, signs of a struggle under everything and polyvagal theory forces us to understand that's not always the case and to not be dismissive of people's experiences when they perhaps have a different autonomic, meaning automatic, not conscious response to the

event.

[00:39:45] **Jill Stoddard:** Yes. Well, thank you. I think that's so, so important for people to hear. Now, I want to take a quick pause here and I'm going to ask both of you and our listeners, and I myself, to just take three slow breaths. So can we all do that together?

[00:40:03] **Seth Porges:** Okay.

[00:40:22] **Jill Stoddard:** Okay, so now we can all experientially notice how that made us feel compared to how we might have been feeling three breaths ago. So, John or Seth, can you talk to us a little bit about the breath? And the vagus nerve, and feeling safe, and whether there's even an ideal way to breathe to really stimulate or activate those feelings of safety.

[00:40:45] **Stephen Porges:** Okay, let me kind of start here and then Seth can translate. Um, exhalation.

[00:40:55] **Jill Stoddard:** Oh good, tell me.

[00:41:01] **Stephen Porges:** So, it's not just slow breathing, it's long exhalation, and that's because the vagal impact on the heart's pacemaker, where the vagus axis is literally a brake to slow the heart rate up, occurs during exhalation. And during inhalation, you basically are lifting the brake off this pacemaker. And what does that mean?

It means that the pacemaker is now driving the rhythm of the heart or the beating of the heart. And for many people, it's going to be between 90 and 110 beats per minute if you take the vagus off. But if the vagus is on its tonic level to the pacemaker, many people will have the heart rates of 60, 65 in that range.

And so what you're really seeing is this dynamic impact of that ventral myelinated mammalian vagus, the one that's linked to your face. Uh, in the calming mechanisms of slowing you up.

[00:41:56] **Seth Porges:** Yeah. So, uh, let me do some translation here. Yeah. So oftentimes we talk about slow breathing as this way of calming us. I mean, this has been embedded into ancient traditions going back many, many, many thousands of years, and it's stuck around because it works, even if the people who first came up with it didn't understand why from a neuroanatomical perspective.

And what my dad's saying right here, that's really key is that when we actually inhale that activates us, it's only the exhalation that calms us. Uh, so lots of inhalation, that's hyperventilation, that's, that's stimulating, that's sympathetic activation. It's the exhalation and the slow exhalation that acts as a vagal trigger and slows us down.

Now let's understand exactly why breathing slows us down. I think a lot of people might be skeptical of it. If they might, you know, they might kind of find it a little woo or something like that, but the way it works is actually really,

really simple. You know, our autonomic nervous system links all these different bodily systems, so they all act kind of at the same tempo.

So when you're activated and mobilized, everything's sped up. When you're calm and relaxed, everything slows down. Most of these autonomic systems are again, autonomic, automatic, outside of our conscious control. I can't think to myself, Hey heart, let's slow down right now. Right. I don't have the ability to speak to my heart in English.

Um, what makes breathing unique is it's an autonomic automatic system that operates without our conscious control that we can also consciously control, and that makes it kind of a portal into our autonomic nervous system, a way for us to get in there when things are really, really fast and moving around and sped up, slow down one part of it, and in doing so, slow down the rest of it because the vagus ties it all together. And what you're basically telling your body is that if I have the time to slow down right now and to breathe slowly, Hey, I'm not actually running for my life. You know, I'm not actually mobilized right now. I'm not actually in this state of severe duress.

And you're giving your body permission to downregulate its defenses and, uh, and calm yourself down.

[00:43:56] **Jill Stoddard:** So in addition to using the breath, you've kind of alluded to the importance of social relationships. What are some other ways that people can activate these feelings of safety according to PVT?

[00:44:09] **Stephen Porges:** So we've talked about breathing. We talked about social interactions. We can also talk about listening, listening to melodic voices, uh, music, ballads. Um, I actually have a slide that says our nervous system is waiting for Johnny Mathis, and that has a lot to do with the culture, the age that I am, and that Johnny Mathis is a tenor, and the music was literally used when... Adolescents would get together and they were a little shy so they put on Johnny Mathis and Johnny Mathis music did the rest. It enabled the people to feel safe enough with each other uh, that they basically, the music got rid of some of their defensiveness.

And that was an amazing experience that many of us lived through. And that's why music played that role. It wasn't dance music. It was not march music. It was basically music of feeling safe. And it's basically had the same, uh, melodic frequencies or intonations that a maternal lullaby would have in calming a child.

And actually now I'm involved with developing, uh, music, we call it Polyvagal music, which takes bodily, uh, basically the rhythms of our body and embeds it in the composition of music to signal the body that it's literally safe enough to give up its defenses, give up its armor. And these become remarkable experiences.

What I also want to say was that my history of touching this aspect of exhalation, slow exhalation, goes back to the time when I played the clarinet. I was a classical musician, and I was reasonably good, but the point was that I was this adolescent in this very dynamically changing world. And yet I was... Taking breaths and exhaling slowly, listening to the sounds, creating the embouchure, the muscles of the face and mouth, totally profound exercises of the social engagement system, or we could call it pranayama yoga. And I was doing this for an hour a day every day. And it was really a great regulator of my physiology during these, let's say challenging times.

[00:46:19] **Jill Stoddard:** Oh, that's fascinating. Yeah, I definitely notice specifically using that ujjayi breath that is so common in yoga. It tends to be very regulating for me, and I don't, that's not necessarily longer exhales, but it's, you know, using those whisper muscles.

[00:46:33] **Stephen Porges:** well, let me give you another hint and that is humming

[00:46:37] **Jill Stoddard:** Ah,

[00:46:38] **Stephen Porges:** and humming does amazing things. Humming will literally, if you hum at about the C below middle C, 128 Hertz, it will open up your sinuses because it releases nitric oxide in your sinuses. So in the sinuses are regulated by the trigeminal nerve.

So now you're flooding the same social engagement system through humming.

[00:47:02] **Jill Stoddard:** fascinating. Okay, so we have breathing, humming, social interaction, and you do make it a point to say that face to face is more Uh, I don't know what the word to use is, is more beneficial than non face to face. And it sounds like Zoom is better than no face, but in person face is better, is the best, right?

[00:47:22] **Stephen Porges:** yeah, but let's, let's qualify that, because if you carry with you a trauma history, Zoom is better than face to face. Um, in fact,

many therapists really will say that during the pandemic, uh, they made great progress with their clients because the clients were in control. They were safe in their own home and they could turn off their camera if they felt, uh, their vulnerability.

So the issue is for the, let's say a neuro typical. I don't mean from neuro diverse. I really mean that since when we're in the state that our nervous system evolved to be in, we all have this potential. When we're in that face to face it's the gold standard. But many people, especially in the world of therapy, have experiences that don't easily allow that aspect of your nervous system to express itself. And therefore titration of face to face is important. All we need to think about is really if you're from the East coast and you ride the subway in New York city, and when you get on, you make eye contact with everyone in the car, you're not going to be a welcome person.

You'll get a lot of people getting up and giving you their seats because if you don't have the relationship and you don't have a trusting feeling with another, the eye contact is very intrusive. I learned that when I was in graduate school with rhesus monkeys. If you really want to upset the monkeys, you go into their colony room and you stare at them.

[00:48:46] **Jill Stoddard:** Right. So it's nuanced and there's culture here and social mores that all will influence, be it mediators or moderators, I'm not sure which one, of how safe a person feels, and that feeling is the important part.

So how do you, I was going to ask what PVT informed therapy looks like? And you know, I treat anxiety disorders exclusively and so I could see my clients using this knowledge as a way to justify avoidance Oh, well The way that I feel safe is just to stay at home in my room and like never go out into the world and of course That's not really building a rich and meaningful life, which is typically what the goals for my psychotherapy are.

And often they have to learn that a thing that, a place that they might perceive to be dangerous is actually safe. Like learn to feel safe in those other environments.

[00:49:37] **Stephen Porges:** going to interrupt or jump on your statement, and let's throw the word learn, because it's not going to work if you use that word. We have to basically let people to be aware of their state. awareness. They can learn to become aware. They can focus that attention. And when they do that, they have a great learning.

Let me give you an example of a colleague of mine who treats anxiety disorders. And she has severe social anxiety as well. And she was going to introduce me at a conference. And the conference had a thousand people in it. She was extremely anxious about it. She came up to me the night before and said, Steve, I'm really, uh, frightened to go up there tomorrow and introduce you.

And I said, don't worry about that. I'll fix it. Okay. This is be careful what you say nights before conferences. And so the next morning at 10 minutes to nine, she walks up to me seriously and says, okay, Steve, fix it. Now, what I did was, I was listening as she made her statements to her voice and her breathing.

And she was literally taking a breath on every word. And if you treat people with anxieties, you can see how they breathe. So rather than saying breathe differently, I said, extend the duration of your phrases. Just add words to your phrase before you take a breath. And it was extremely hard for her for the first couple of tries.

And then it started to work, and she started to extend the phrases. And by the time she wanted to introduce me, she was like in a different state. And she now uses it to treat social anxiety. The point was that rather than saying, take longer breaths, I said, extend the duration of your phrases.

Now that was a real task that you can put your hands around without thinking about your physiology. And that is what worked for her. So the point is that we can start understanding that we can literally get into our nervous system through different ways. I am working on the notion of that when we listen to music that has Emphasizes prosodic features like a maternal voice.

It has a calming effect. I developed the intervention called the Safe and Sound Protocol that does that. And it has some remarkable effects on people who are on spectrum or people who have auditory hypersensitivities. And this goes back to your comment about your daughter. you told me about your daughter, told me a lot.

So auditory hypersensitivities are the natural emergent property of being in a physiological state of threat by definition. Now, it doesn't mean that if you have auditory hypersensitivities, you always have an autonomic dysfunction. You can have a middle ear or ear issues, but in general, the adaptive function of auditory hypersensitivities is to detect threat.

So when you are in a state of physiologically, tuned to be in a state of threat. You take off that ventral vagus, you enable the sympathetics to be more reactive, and it changes the neural tone to the middle ear muscles, and it affects how the eardrum, how tense it is and what sounds get in. So your daughter has difficulty extracting human voice in social context, but she's hypersensitive to sound.

So it's almost like paradoxical because the frequency of human Uh, communication, especially social communication, are at higher frequencies, lower amplitude than low frequency predator type sounds. So it's adaptive. Your nervous system is doing what it needs to do when it's in a state of threat.

[00:53:11] **Jill Stoddard:** Yeah. Yeah. It's, it's really fascinating. There were, there were elements of that, that I, I had not. Heard or learned before that, like that was when I was saying to my husband, you really need to read this book. This is, this is so interesting. I had two questions that I don't think were in the book that just sort of occurred to me as I was reading.

One is that you do talk about oxytocin in the book, and I loved the reveal about the famous Dr. Sue Carter and who she is to you. That was wonderful. Such a nice surprise. Um, but what it made me think about is whether the vagus nerve is impacted by hormonal changes, and would that be part of why we see mood changes during puberty and menopause?

[00:53:52] **Stephen Porges:** course. Course what's interesting about where the oxytocin receptors reside within the nuclei that regulate the brainstem regulate the autonomic nervous system is the dorsal vagus that shutdown system is just loaded with oxytocin receptors. So when oxytocin floods that area, you can immobilize without fear and we call that intimacy.

[00:54:16] **Jill Stoddard:** Yeah, right.

[00:54:17] **Stephen Porges:** And immobilization, without the oxytocin coming, is going to cause a different type of reaction. And it, you know, one can argue that it's because of partuition, giving birth, or reproduction, and stuff like that. It's also about being safe in the arms of another. So our bodies can conform and give up our, let's say, our defensive skeletal motor girdle just get rid of it, and our bodies can conform.

[00:54:42] **Jill Stoddard:** So we are recording this on November 1st, so yesterday was Halloween. And last week my family and I went to this like 45 minute walk through a dark, haunted woods with fog and creepy characters that

were jumping out at us left and right. And of course my 9 year old son was fine and I'm the one who's screaming and, you know.

[00:55:04] **Stephen Porges:** Hmm.

[00:55:06] **Jill Stoddard:** And because I had been reading the book, it made me think about Polly Bagel Theory, and I was curious what your thoughts are on why we seek out roller coasters and horror films and haunted houses and these kinds of things. Because I don't actually want to actually be in danger, but there's something that people like about this thrilling experience of being scared.

[00:55:27] **Stephen Porges:** I'll start and Seth will continue on this one. Basically,

[00:55:31] **Jill Stoddard:** Right.

[00:55:32] **Stephen Porges:** it's the notion of like this amazing experience of going on a roller coaster and I start with this because Seth and his brother Eric and I, not necessarily his mom, went on every roller coaster we could find for years and the answer is you can have the experience of jumping out of a 10th story window in safety if you can cognitively deal with that.

So it's an exploration for me. It was an exploration of visceral feelings. And if I was actually doing, uh, these rollercoaster rides, trying to keep my muscles relaxed to see if I could do that, I was actually doing it as literally a Zen exercise would want to think about it because it was an exploration of bodily feelings.

And it's curiosity. Can we experience these things? The other part that makes about the scariness, which is a little bit different, is the notion that our nervous system likes, we like expectancy, that's safety. But disruption of context, like a haunted house that's not really haunted, is that we know that it's not, it's not dangerous, but we can now experience what danger might feel like. It's kind of this amazing bit. The other part is it becomes the roots of humor. Disruptions of predictability like peekaboo. Which is frightening in the initial experience, but then becomes predictable.

It's the violation of predictability that becomes the roots of humor. So, so we start seeing all these things. So haunted houses in so many movies also often have humor embedded in it.

[00:57:12] **Seth Porges:** Yeah, you know, we're drawn, I think, instinctively to experiences that allow us to kind of experience our defensive systems in a safe context. Um, you know, we write quite a bit in the book about this idea of what is play? You know, dogs playing, children playing, adults playing. Uh, what you're doing is you're taking the mobilization, the activation of the defensive system, the sympathetic nervous system, but within a safe social context, you know, you're, you're not actually in danger. And what that does is allows your body to basically exercise the ability to tap into these defensive systems when needed so that they're for you without perhaps getting stuck in them.

You know, none of these defensive systems are innately bad. You know, they are there to keep us alive. The problems people have often is when they are stuck in them, when they overwhelm us, when we don't have access to the healing restorative systems of safety and by exercising our body's ability to kind of tap into defensive systems in safe context, it allows them to be there for us in accessible to us, uh, without getting stuck in them.

And I think there's some of that in haunted houses. I think there's some of that in roller coasters. I think there's some of that in just going to like a dance party with friends, right? It's the same thing. You're tapping into these defensive mobilization fear systems, but in a safe social context.

[00:58:30] **Stephen Porges:** Let me add, there's also, uh, you might be familiar with Navy SEALs, and the Navy SEALs are special forces in the Navy, and part of their training is literally to be, start getting literally submerged and start to drown and then be resuscitated by your teammates, so you're going, going into life threat.

And through these repeated resuscitation, your body builds a trust that those physiological reactions, which would cause panic in many people, and death, are really basically, the nervous system says, it's okay, I'll be taken care of. And this results in some very interesting social bonds and relationships.

The team members are very closely bonded, but this often interferes with their family relationships. So.

[00:59:19] **Jill Stoddard:** But that even happens with roller coasters and the haunted houses and things like that too. We, now that you mentioned that, I didn't realize it at the time, but you know, we had, we all kind of bonded around this like funny, scary, semi unpredictable, semi predictable kind of experience. It was like, it was a real family bonding

[00:59:38] **Stephen Porges:** but the family is the predictable unit, and the

[00:59:40] **Jill Stoddard:** Yeah. Yeah. Yeah.

Yeah.

[00:59:42] **Seth Porges:** Yeah, it's, it's why you're going to horror movies is like such a social experience, like people would much rather watch those in theaters than they would at home because you're sharing this in a safe context to other people.

[00:59:52] **Jill Stoddard:** Right, you're being scared together, but you're actually safe.

[00:59:55] **Seth Porges:** Yeah.

[00:59:56] **Jill Stoddard:** Well, gentlemen, this was absolutely fascinating. Thank you so much for joining me. Again, for our listeners, the book is *Our Polyvagal World, How Safety and Trauma Changes Us*. And again, if you have ever been curious about polyvagal theory, this is the book that will explain it in an interesting, and accessible way.

And it's actually a relatively short book too. So I know for those of us who tend to be busy and might not have as much time to read, this is the one. So thank you. Thank you so much for joining us. I really appreciate your time.

[01:00:25] **Seth Porges:** Great to be here. Thank you.

[01:00:27] **Jill Stoddard:** thank you for listening to *Psychologists Off the Clock*. If you enjoy our podcast, you can help us out by leaving a review or contributing on Patreon.

[01:00:44] **Emily Edlynn:** You can get more psychology tips by subscribing to our newsletter and connecting with us on social media.

[01:00:49] **Michael Herold:** We'd like to thank our podcast production manager, Jaidine Stoutt Williams.

[01:00:54] **Debbie Sorensen:** This podcast is for informational and entertainment purposes only and is not meant to be a substitute for mental health

treatment. If you're looking for mental health treatment, please visit the resources page of our website, offtheclockpsych.com.